

Remarks

Claims 2, 3, 8 and 11 stand rejected under 35 U.S.C. § 112, ¶2 as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1–12 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 5,462,397 ("Iwabuchi"). Claims 1–3 and 7–9 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 5,433,785 ("Saito"). Claims 1–12 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 5,388,944 ("Takanabe"). Claims 1–3 and 7–9 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 4,990,047 ("Wagner").

Applicant has amended the Specification to address the Examiner's objection thereto. No new matter has been added.

Claim Rejections Under § 112, ¶2.

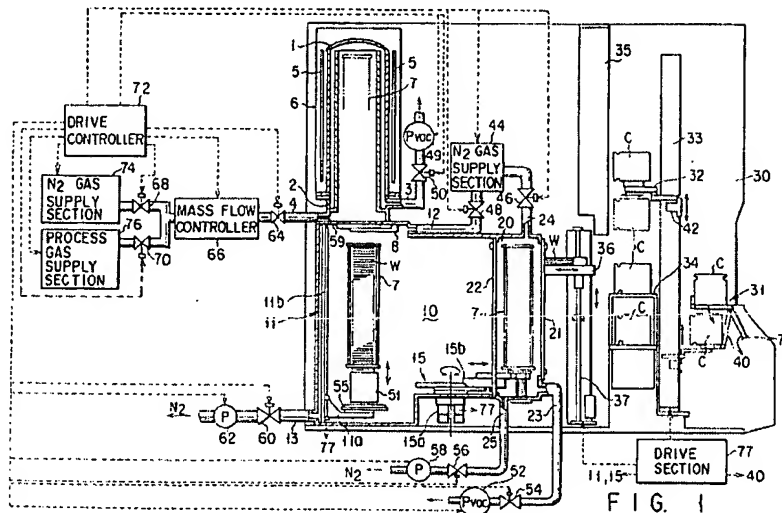
Claims 2, 3, 8 and 11 stand rejected under 35 U.S.C. § 112, ¶2 as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 2, 8 and 11 have been amended to clarify the subject matter which applicant regards as the invention. Claim 3 depends from amended Claim 2. Applicant respectfully requests that this rejection be withdrawn.

Claim Rejections Under § 102(b) based on Iwabuchi.

Claims 1–12 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Iwabuchi. Claims 1 and 7 are independent; Claims 2–6 depend from Claim 1, and Claims 8–12 depend from Claim 7.

Iwabuchi discloses a semiconductor processing apparatus that includes a process tube 1, a transfer chamber 10, and a wafer boat containing chamber 20. The apparatus further includes a transfer mechanism 15 configured to transfer a wafer boat 7 between the wafer boat containing chamber 20 and an elevating mechanism 11 that is located within the transfer chamber 10. The elevating mechanism 11 is configured to

detachably insert the wafer boat 7 into the process tube 1. This structure is illustrated in Figure 1 of Iwabuchi, which is reproduced below.



In contrast to the disclosure of Iwabuchi, Claim 1 recites, among other limitations, a "wafer transfer arm [that] is adapted to transfer said semiconductor wafers between the load lock chamber, the transfer chamber, and the reaction chamber." Iwabuchi does not teach this limitation. Specifically, Iwabuchi teaches two separate, distinct mechanisms—the transfer mechanism 15 and the elevating mechanism 11—for moving wafers between a process tube 1, a transfer chamber 10, and a wafer boat containing chamber 20. Neither the transfer mechanism nor the elevating mechanism disclosed in Iwabuchi, taken by itself, is capable of moving wafers between the three chambers.

In view of the foregoing, Applicant submits that Iwabuchi does not anticipate Claim 1, and therefore respectfully suggests that Claim 1 is allowable over Iwabuchi. Furthermore, because Claims 2–6 depend from Claim 1, Applicant submits that Claims 2–6 are allowable over Iwabuchi for the same reasons that Claim 1 is allowable over Iwabuchi, in addition to reciting further distinguishing features of particular utility.

Likewise, Claim 7 recites, among other limitations, "transferring said semiconductor wafers between said load lock chamber, said transfer chamber, and said reaction chamber using said wafer transfer arm." Iwabuchi does not teach this limitation. As described above, Iwabuchi discloses transferring a wafer boat between a process tube 1, a transfer chamber 10, and a wafer boat containing chamber 20 using a

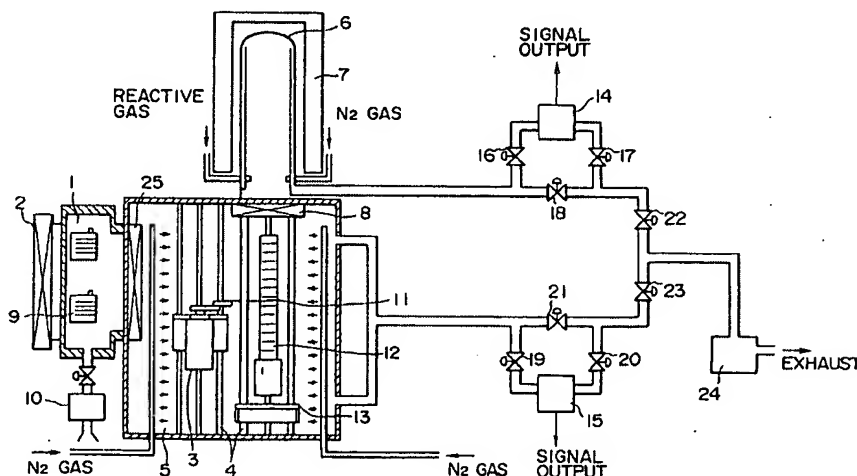
transfer mechanism 15 and an elevating mechanism 11. These two mechanisms are completely separate and distinct from each other. Neither of these mechanisms, taken separately, is capable of moving wafers between the three chambers.

In view of the foregoing, Applicant submits that Iwabuchi does not anticipate Claim 7, and therefore respectfully suggests that Claim 7 is allowable over Iwabuchi. Furthermore, because Claims 8–12 depend from Claim 1, Applicant submits that Claims 8–12 are allowable over Iwabuchi for the same reasons that Claim 7 is allowable over Iwabuchi, in addition to reciting further distinguishing features of particular utility.

Claim Rejections Under § 102(b) based on Saito.

Claims 1–3 and 7–9 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Saito. Claims 1 and 7 are independent; Claims 2 and 3 depend from Claim 1, and Claims 8 and 9 depend from Claim 7.

Saito discloses a semiconductor processing apparatus that includes a cassette chamber 1, a load-lock chamber 5, and a reaction chamber 6. The apparatus further includes a transfer unit 3 configured to transfer wafers 11 between the cassette chamber 1 and the load-lock chamber 5, as well as an elevator 4 configured to transfer wafers 11 between the load-lock chamber 5 and the reaction chamber 6. This structure is illustrated in Figure 1 of Saito, which is reproduced below.



In contrast to the disclosure of Saito, Claim 1 recites, among other limitations, a “wafer transfer arm [that] is adapted to transfer said semiconductor wafers between the

load lock chamber, the transfer chamber, and the reaction chamber.” Saito does not teach this limitation. Specifically, Saito teaches two separate, distinct mechanisms—the transfer unit 3 and the elevator 4—for moving wafers between a cassette chamber 1, a load-lock chamber 5, and a reaction chamber 6. Neither the transfer unit 3 nor the elevator 4, taken separately, is capable of moving wafers between the three chambers.

In view of the foregoing, Applicant submits that Saito does not anticipate Claim 1, and therefore respectfully suggests that Claim 1 is allowable over Saito. Furthermore, because Claims 2 and 3 depend from Claim 1, Applicant submits that Claims 2 and 3 are allowable over Saito for the same reasons that Claim 1 is allowable over Saito, in addition to reciting further distinguishing features of particular utility.

Likewise, Claim 7 recites, among other limitations, “transferring said semiconductor wafers between said load lock chamber, said transfer chamber, and said reaction chamber using said wafer transfer arm.” Saito does not teach this limitation. As described above, Saito discloses transferring wafers between a cassette chamber 1, a load-lock chamber 5, and a reaction chamber 6 using a transfer unit 3 and an elevator 4. The transfer unit 3 and the elevator 4 are completely separate and distinct from each other. Neither of these mechanisms, taken separately, is capable of moving wafers between the three chambers.

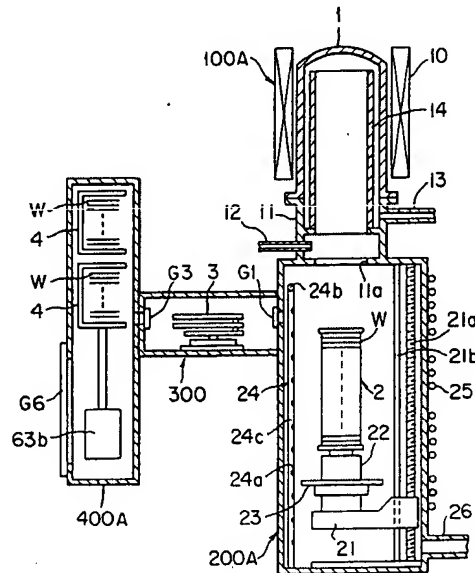
In view of the foregoing, Applicant submits that Saito does not anticipate Claim 7, and therefore respectfully suggests that Claim 7 is allowable over Saito. Furthermore, because Claims 8 and 9 depend from Claim 7, Applicant submits that Claims 8 and 9 are allowable over Saito for the same reasons that Claim 7 is allowable over Saito, in addition to reciting further distinguishing features of particular utility.

Claim Rejections Under § 102(b) based on Takanabe.

Claims 1–12 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Takanabe. Claims 1 and 7 are independent; Claims 2–6 depend from Claim 1, and Claims 8–12 depend from Claim 7.

Takanabe discloses a semiconductor processing apparatus that includes a heat-treatment section 100A, a load lock chamber 200A, and a cassette chamber 400A. The apparatus further includes a shifting means 3 configured to convey wafers between

the cassette chamber 400A and the load lock chamber 200A, as well as a boat elevator 21 configured to transfer wafers between the load lock chamber 200A and the treatment section 100A. This structure is illustrated in Figure 1 of Takanabe, which is reproduced below.



In contrast to the disclosure of Takanabe, Claim 1 recites, among other limitations, a “wafer transfer arm [that] is adapted to transfer said semiconductor wafers between the load lock chamber, the transfer chamber, and the reaction chamber.” Takanabe does not teach this limitation. Specifically, Takanabe teaches two separate, distinct mechanisms—the shifting means 3 and the boat elevator 21—for moving wafers between a heat-treatment section 100A, a load lock chamber 200A, and a cassette chamber 400A. Neither the shifting means nor the boat elevator, taken separately, is capable of moving wafers between the three chambers.

In view of the foregoing, Applicant submits that Takanabe does not anticipate Claim 1, and therefore respectfully suggests that Claim 1 is allowable over Takanabe. Furthermore, because Claims 2–6 depend from Claim 1, Applicant submits that Claims 2–6 are allowable over Takanabe for the same reasons that Claim 1 is allowable over Takanabe, in addition to reciting further distinguishing features of particular utility.

Likewise, Claim 7 recites, among other limitations, “transferring said semiconductor wafers between said load lock chamber, said transfer chamber, and said reaction chamber using said wafer transfer arm.” Takanabe does not teach this

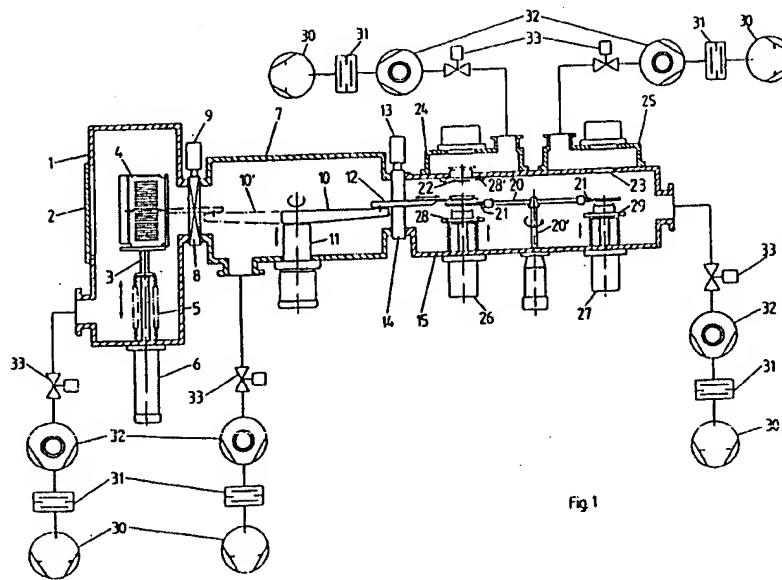
limitation. As described above, Takanabe discloses transferring wafers between a heat-treatment section 100A, a load lock chamber 200A, and a cassette chamber 400A using a shifting means 3 and a boat elevator 21. These two transfer mechanisms are completely separate and distinct from each other. Neither of these mechanisms, taken separately, is capable of moving wafers between the three chambers.

In view of the foregoing, Applicant submits that Takanabe does not anticipate Claim 7, and therefore respectfully suggests that Claim 7 is allowable over Takanabe. Furthermore, because Claims 8–12 depend from Claim 1, Applicant submits that Claims 8–12 are allowable over Takanabe for the same reasons that Claim 7 is allowable over Takanabe, in addition to reciting further distinguishing features of particular utility.

Claim Rejections Under § 102(b) based on Wagner.

Claims 1–3 and 7–9 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Wagner. Claims 1 and 7 are independent; Claims 2 and 3 depend from Claim 1, and Claims 8 and 9 depend from Claim 7.

Wagner discloses a semiconductor processing apparatus that includes a lock chamber 1, an intermediate chamber 15, and a plurality of treatment chambers 24, 25. The apparatus further includes a first transport mechanism 10 that is configured to move disks between the load lock chamber 1 and the intermediate chamber 15, as well as a plurality of elevating mechanisms 26, 27 that are configured to move disks between the intermediate chamber 15 and the treatment chambers 24, 25. This structure is illustrated in Figure 1 of Wagner, which is reproduced below.



In contrast to the disclosure of Wagner, Claim 1 recites, among other limitations, a “wafer transfer arm [that] is adapted to transfer said semiconductor wafers between the load lock chamber, the transfer chamber, and the reaction chamber.” Wagner does not teach this limitation. Specifically, Wagner teaches two separate, distinct mechanisms—the first transport mechanism 10 and the elevating mechanisms 26, 27—for moving disks between a lock chamber 1, an intermediate chamber 15, and a plurality of treatment chambers 24, 25. Neither the first transport mechanism 10 nor the elevating mechanisms 26, 27, taken separately, is capable of moving disks between these chambers.

In view of the foregoing, Applicant submits that Wagner does not anticipate Claim 1, and therefore respectfully suggests that Claim 1 is allowable over Wagner. Furthermore, because Claims 2 and 3 depend from Claim 1, Applicant submits that Claims 2 and 3 are allowable over Wagner for the same reasons that Claim 1 is allowable over Wagner, in addition to reciting further distinguishing features of particular utility.

Likewise, Claim 7 recites, among other limitations, “transferring said semiconductor wafers between said load lock chamber, said transfer chamber, and said reaction chamber using said wafer transfer arm.” Wagner does not teach this limitation. As described above, Wagner discloses transferring disks between a lock chamber 1, an intermediate chamber 15, and a plurality of treatment chambers 24, 25

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using a first transport mechanism 10 and elevating mechanisms 26, 27. The first transport mechanism 10 and the elevating mechanisms 26, 27 are completely separate and distinct from each other. Neither of these mechanisms, taken separately, is capable of moving disks between the lock chamber 1, the intermediate chamber 15, and one of the treatment chambers 24, 25.

In view of the foregoing, Applicant submits that Wagner does not anticipate Claim 7, and therefore respectfully suggests that Claim 7 is allowable over Wagner. Furthermore, because Claims 8 and 9 depend from Claim 7, Applicant submits that Claims 8 and 9 are allowable over Wagner for the same reasons that Claim 7 is allowable over Wagner, in addition to reciting further distinguishing features of particular utility.

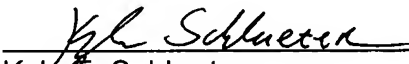
Conclusion.

In view of the foregoing amendments, the Applicants submit that this application is in condition for allowance, and respectfully request the same. If, however, some issue remains that the Examiner feels can be addressed by an Examiner's Amendment, the Examiner is cordially invited to call the undersigned for authorization.

Respectfully submitted,

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